National Pollutant Discharge Elimination System (NPDES) Overview

The State of Indiana's efforts to control the direct discharge of pollutants to waters of the state were inaugurated by the passage of the Stream Pollution Control Law of 1943. The vehicle currently used to control direct discharges to waters of the state is the NPDES (National Pollutant Discharge Elimination System) permit program. This was made possible by the passage of the Federal Water Pollution Control Act Amendments of 1972 (also referred to as the Clean Water Act). These permits place limits on the amount of pollutants that may be discharged to waters of the state by each discharger. These limits are set at levels protective of both the aquatic life in the waters which receive the discharge and human health.

The State of Indiana was granted primacy from U.S. EPA to issue these permits on January 1, 1975 through implementation of a memorandum of agreement. From 1975 to 1986 the state managed the NPDES program through the Stream Pollution Control Board with staff provided by the Indiana State Board of Health (ISBH), Division of Water Pollution Control. On April 1, 1986, the Department of Environmental Management came into existence and responsibility of the NPDES program was transferred to the Office of Water Quality.

The only significant difference between the two programs is that under the Stream Pollution Control Board the Technical Secretary issued the permits; IDEM issues permits through the Commissioner who has delegated the authority to an Assistant Commissioner. Existing staff were transferred from ISBH to IDEM at this time and on June 1, 1986, the IDEM employees were moved from 1330 West Michigan to 105 South Meridian with a satellite office for field personnel located at Bradbury Street. (Currently, field staff is housed at a satellite office located on Shadeland Avenue). The responsibilities at IDEM were increased at this time with the inclusion of semi-public wastewater permits and public water supply permits. Prior to IDEM, semi-publics were handled by ISBH Division of sanitary Engineering and Public Water Supply by ISBH Water Supply Division.

U.S. EPA, Region V, has oversight authority for the NPDES permits program. Under terms of the memorandum of agreement, Region V has the right to comment on all draft Major discharger permits. In addition to NPDES permitting, the Office of Water Quality Permits Section has several other groups. The pretreatment group regulates the development of municipal pretreatment programs, indirect dischargers, and direct dischargers to the POTW through Industrial Waste Pretreatment (IWP) permits. Regulation of Stormwater, CSO's, and variance requests are handled through a special projects group currently known as the Urban Wet Weather Section. Land application of waste treatment plant sludge is no longer a part of the Office of Water Quality but is now a part of the Office of Land Quality.

The purpose of the NPDES permit is to control the point source discharge of pollutants into the waters of the state such that the quality of the waters of the state is maintained in accordance with the standards contained in 327 IAC 2. The NPDES permit requirements must ensure that the minimum amount of control is imposed upon any new or existing point source through the application of technology-based treatment requirement contained in 327 IAC 5-5-2. According to 327 IAC 5-2-2, "Any discharge of pollutants into waters of the state as a point source discharge, except for exclusions made in 327 IAC 5-2-4, is prohibited unless in conformity with a valid NPDES permit obtained prior to discharge." This is the most basic principal of the NPDES permit program.

The majority of NPDES permits have existed since 1974. This means that most of the permit writing is for permit renewals. Approximately 10% of each year's workload is attributed to new permits, modifications and requests for estimated limits. NPDES permits are designed to be re-issued every five years but are administratively extended in full force and effect indefinitely if the permittee applied for a renewal one hundred eighty days (180) before the current permit expires.

There are several different types of permits that are issued in the NPDES permitting program:

1) Municipal, Semi-Public or State (sanitary-type discharger)
   - (a) Major
     A facility owned by a municipality with a design flow of one million gallons per day (1 mgd) or greater such as cities, towns, regional sewer districts.
   - (b) Minor
     Any municipally owned facility with a design flow of less than one million gallons per day (1 mgd) such as cities, towns, and regional sewer districts.
   - (c) Semipublic
     Any facility not municipally, State or Federally owned. For example - mobile home parks, schools, restaurants, etc.
   - (d) State Owned
     A facility owned or managed by a State agency such as state parks, prisons, etc.
   - (e) Federally Owned
     A facility owned by a federal agency such as a military owned installation, national park, federal penitentiary, etc.

2) Industrial (wstewater that is generated in the process of producing a product)
   (a) Majors
   Classification of a discharger as a major generally involves consideration of factors relating to the significance of the discharger's impact on the environment, such as:
      (A) Nature and quantity of pollutants discharged;
      (B) Character and assimilative capacity of the receiving waters;
      (C) Presence of toxic pollutants in the discharge;
      (D) Compliance history of the discharger.
   (b) Minors
   All dischargers that are not designated as major dischargers.
   (c) Generals
   The purpose of the general permit rule is to provide a streamlined NPDES permitting process for certain classes or categories of industrial point source discharges under the requirements of the applicable general permit rule rather than the requirements of an individual permit specific to a single discharge. Following is a list of general permit rules and the industrial activities they regulate:
      (A) 327 IAC 15-7 Coal mining, coal processing, and reclamation activities;
      (B) 327 IAC 15-8 Noncontact cooling water;
      (C) 327 IAC 15-9 Petroleum products terminals;
      (D) 327 IAC 15-10 Groundwater petroleum remediation systems;
      (E) 327 IAC 15-11 Hydrostatic testing of commercial pipelines;
      (F) 327 IAC 15-12 Sand, gravel, dimension stone or crushed stone operations.
   (d) Cooling Water
   Water that is used to remove heat from a product or process, the water may or may not come into contact with the product.
   (e) Public Water Supply
   Wastewater generated from the process of removing pollutants from ground or surface water for the purpose of producing drinking water.
3) Pretreatment Group
   This group is associated with the NPDES Permit program but they do not fall under the same rule.
   (a) Industrial Wastewater Pretreatment (IWP)
   Processed wastewater generated by industries that contribute to the overall wastewater received by the plant.
4) Urban Wet Weather
   This group is associated with the NPDES Permit program but they do not fall under the same rule.
   (a) Stormwater-related
   Wastewater resulting from precipitation coming in contact with a substance that is either dissolved or suspended in the water.
   (b) Combined Sewer Overflows (CSO)
   Wastewater due to precipitation events that is discharged from combined storm and sanitary sewers.

Municipal Wastewater Discharge Applications

Municipal wastewater treatment facilities may legally discharge treated wastewater into waters of the State of Indiana. The facilities must first obtain a National Pollutant Discharge Elimination System Permit also known as a NPDES Permit.

To obtain a Municipal NPDES Permit an application package must be filed with the Municipal Permits Section of the Office of Water Quality. Facilities that have an average design flow or a proposed average design flow of one million gallons (1 mgd), or more, per day, of treated sanitary waste water and/or serve a population equivalent of 10,000 or greater are considered major municipal systems and are required to file the EPA General Information Form, known as Form One and the standard Form A - Municipal. Systems with an average design flow of less than one million gallons per day (1 mgd), or the proposal of such a discharge, must file the Minor Municipal and Semi-Public Application Package. This includes minor municipal facilities, and semi-publics, as well as state and federally owned treatment plants.

New facilities must submit the appropriate application forms at least one hundred and eighty (180) days prior to the expected date of the first wastewater discharge. Existing facilities must submit the appropriate application forms at least one hundred and eighty (180) days prior to the expiration date of the existing NPDES Permit.

Industrial NPDES Permit Program

The National Pollutant Discharge Elimination System (NPDES) permit program is authorized by Section 402 of the Clean Water Act. The State of Indiana, through the implementation of a memorandum of agreement with the U.S. Environmental Protection Agency, issues NPDES permits. The purpose of the NPDES permit is to control the point source discharge of pollutants into the waters of the state such that the quality of the water of the state is maintained. The following definitions are contained in Title 327 of the Indiana Administrative Code, Article 5, Rule 1, Section 2:

- **Point Source:** any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged.
- **Pollutant:** includes, but is not necessarily limited to: dredged spoil, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, solid wastes, toxic wastes, hazardous substances, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and other industrial, municipal, and agricultural waste discharged into water.
- **Waters of the state:** such accumulations of water, surface and underground, natural and artificial, public and private, or parts thereof, that are wholly or partially within, flow through, or border upon this state. The term does not include any private pond, any off-stream pond, reservoir, or facility built for reduction or control of pollution or cooling of water prior to discharge unless the discharge therefrom causes, or threatens to cause water pollution.

If a facility discharges pollutants from any point source into waters of the state of Indiana, then the operator of that facility must apply for a NPDES permit from the Indiana Department of Environmental Management (IDEM). The Industrial Permits Section issues permits covering discharges from all industries. The Municipal NPDES Permit Section covers discharges from sewage treatment facilities while the Pretreatment Section covers industrial facilities discharging wastewater into non-pretreatment program municipal sewage treatment systems. The following is a list of the NPDES permit application packages that pertain to industrial dischargers:

- Form 2C Application Package: Existing Dischargers of Process Wastewater
- Form 2D Application Package: New Sources and New Dischargers of Process Wastewater
- Form 2E Application Package: Facilities Which Discharge Non-Process Wastewater (i.e. noncontact cooling water)
- Public Water Supply Application Package: Facilities which discharge wastewater generated by the process of treating water for use as a public water supply (This is a downloadable Word Perfect File)

An application fee of fifty dollars ($50) and a Potentially Affected Persons form must accompany the NPDES permit application.

Overview of the NPDES Permit

The NPDES permit controls point source discharges of pollutants into the waters of the state through the establishment of effluent limitations and operating requirements. Generally, a NPDES permit is developed in the following manner:

1) Identification of all pollutants known or believed to be present in the effluent. Review of all existing information in the application and the IDEM files such as effluent quality data, current permit conditions, inspections, construction permits, and compliance status.
2) Determining applicability of EPA technology-based effluent guidelines for a discharger and the limits based on the guidelines. If EPA guidelines don't exist, development of effluent limits based on best professional judgement of the technology representing the best available treatment.
3) Determining water quality-based effluent limits for pollutants required by EPA guidelines as well as any additional pollutants believed to be present in the effluent. Water quality-based effluent limits take into account characteristics of the receiving stream such as the low flow value and hardness of the stream at the point of discharge.
4) The permit is drafted with the effluent limits based on either the technology-based limits or water quality-based effluent limits whichever are more stringent.
5) The permit may contain a time schedule for the permittee to achieve compliance with effluent limits that were either not included in the previous permit or are more stringent than the effluent limits in the previous permit. This schedule of compliance is included in the permit only if it is determined that the permittee is unable to meet the limits at the time of permit issuance. If the permit applicant is a new facility or an existing facility that is recommencing its discharge, they are not allowed a schedule of compliance.

Prior to issuance, the permit is placed on public notice for a minimum of thirty (30) days to receive comments from the public and the permittee. During the public notice period, any interested party, including the permittee, may request that a

public hearing be held to allow those in attendance to present oral and written comments to IDEM regarding conditions of the permit.

IDEM must respond to all oral and written comments prior to or in conjunction with the issuance of the final permit. If permit conditions are significantly changed in response to the comments, the permit may be placed on public notice for another thirty (30) day period with the opportunity for a public hearing. There is no limit on the number of times that a permit may need to be public noticed prior to issuance.

After permit conditions are finalized, the permit is issued. Any affected party may request an adjudication of the permit including a stay of any contested permit condition within eight (8) days of permit issuance. If adjudication is not requested within eight (8) days, the permit becomes effective. The permit can be effective for no more than five (5) years unless the permittee applies for a renewal of their NPDES permit prior to the expiration date of their existing permit in which case the existing permit is automatically extended until the effective date of a new permit.

NPDES General Permit Rule Program

The NPDES general permit rule program, Title 327 IAC 15, became effective on September 30, 1992. The purpose of the general permit rule program is to provide a streamlined NPDES permitting process for certain classes or categories of industrial point source discharges. Coverage under a NPDES general permit rule is unique in that a facility operates and discharges under the requirements of the applicable general permit rule rather than the requirements of an individual permit. 327 IAC 15-1 through 15-4 establish the basic requirements for all NPDES general permit rules. Following is a list of the general permit rules and the industrial activities they regulate:

1) 327 IAC 15-7 Coal mining, coal processing, and reclamation activities
2) 327 IAC 15-8 Non-contact cooling water
3) 327 IAC 15-9 Petroleum products terminals
4) 327 IAC 15-10 Groundwater petroleum remediation systems
5) 327 IAC 15-11 Hydrostatic testing of commercial pipelines
6) 327 IAC 15-12 Sand, gravel, dimension stone or crushed stone operations

In order to obtain coverage under an NPDES general permit rule, an applicant must submit a Notice of Intent (NOI) letter for the applicable general permit rule. The NOI letter must contain the information required by 327 IAC 15-3 and the appropriate general permit rule. In order to simplify this process, the Industrial Permits Section of the IDEM has developed a NOI letter checklist that identifies the required information for a particular general permit rule.

An application fee of fifty dollars ($50) and a Potentially Affected Persons form must accompany the NOI letter.

Pretreatment Permit Program

What is Pretreatment?

Beneath the streets of every city and many smaller communities, a system of sewers and pumps convey wastewater away from homes, factories, offices, and stores. This disposed water, which may contain a variety of domestic, commercial, and industrial wastes, flows through the sewers to a wastewater treatment plant. There, pollutants are removed and the cleansed water is discharged into an adjacent water body, such as a river, bay, lake or ocean. The residues of the treatment process (biosolids) are either used productively as a soil conditioner or disposed of as a solid waste.

Industrial plants are only one of many sources of wastewater discharged into municipal sewers. The wastewater discharged by industry is often contaminated by a variety of toxic or otherwise harmful substances not common to other sources such as the by-products of industrial processes (e.g., cyanide from electroplating shops and lead from the manufacturing of batteries). These wastes can pose serious hazards. Sewage collection and treatment systems have not been designed to treat industrial wastes. Industrial wastes can damage the sewers and interfere with the operation of treatment plants, or pass through the systems untreated. This can result in contamination of nearby water bodies and increase the cost and environmental risks of sludge treatment and disposal.

The undesirable effects resulting from the discharge of industrial wastewater into municipal sewers can be prevented. Industrial plants, using proven pollution control techniques, can remove pollutants from their wastewaters before discharging them into the municipal sewage treatment system. This practice is known as "pretreatment".

National Pretreatment Standards

The federal government has developed national regulations or "standards" that restrict industrial pollutants discharged into sewage systems. Individual POTWs must impose limitations (via a Sewer Use Ordinance) that may be stricter than the national standards, but cannot allow less stringent levels of control. The national pretreatment standards consist of two sets of rules, prohibited discharge standards and categorical pretreatment standards.

Prohibited Discharge Standards

The National Prohibited Discharge Standards forbid certain types of discharges by any sewage system user (40 CFR 403). The standards apply to all industrial/commercial system users whether or not they are covered by categorical pretreatment standards.

The general prohibitions forbid pollutants to be discharged into the sewage system if they pass through the POTW untreated and cause the POTW to violate its NPDES permit, or if they interfere with POTW operations (including sludge disposal).

Categorical Pretreatment Standards

Categorical Pretreatment Standards are pollution control regulations for specific industries. The standards regulate the level of pollutants in the wastes discharged into the sewage system from an industrial process. Each categorical standard covers one industry category and assigns specific end-of-process limits for the process wastestreams covered by that specific category.

Pretreatment Cities

There are currently forty-five (45) pretreatment cities in Indiana that run local pretreatment programs. If you are discharging process wastewater to one of these city POTWs, you must apply for a discharge permit through that local program. Each program conducts it's own permitting, inspecting, sampling and enforcement. The POTW shall control, through permits or another control mechanism, the contribution to the POTW from each Significant Industrial User [40 CFR 403.8 (f)(iii)]. IDEM oversees each program by performing occasional audits.

All Other Industries in Indiana

All categorical dischargers not located in a pretreatment city must apply to IDEM for an Industrial Wastewater Pretreatment (IWP) permit and must meet the specific requirements in an issued permit. Any Significant Industrial User must also apply for a discharge permit although the industry may not fall under a specific category. A Significant Industrial User is one that:

- Discharges an average of twenty-five thousand gallons per day (25, 000 gpd) or more of process wastewater to the POTW (excluding sanitary, non-contact cooling and boiler blowdown wastewater);
- Contributes a process wastestream that makes up five per cent (5%) or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant;
- Or has a reasonable potential for adversely affecting the POTW's operation or violating a Pretreatment Standard [40 CFR 403.3(t)].